1. Biographical Sketch: Costas M. Soukoulis

http://cmpweb.ameslab.gov/personnel/soukoulis/

Professional Preparation

University of Athens, Athens, Greece	Physics	B.S.	1974
University of Chicago, Chicago, Illinois, USA	Physics	M.S.	1975
University of Chicago, Chicago, Illinois, USA	Physics	Ph.D.	1978

Appointments

2007-present	Frances M. Craig Endowed Chair, Iowa State University
2005-present	Distinguished Professor of Liberal Arts and Sciences, Iowa State University
1990-present	Senior Scientist, Ames Laboratory, Iowa State University, Ames, Iowa
1990-present	Professor, Department of Physics and Ames Lab., Iowa State University
1986-1990	Associate Professor, Department of Physics and Ames Lab., Iowa State Univ.
1984-1986	Assistant Professor, Department of Physics and Ames Lab., Iowa State Univ.
1981-1984	Research Physicist, Exxon Corporate Research Laboratories
1978-1981	Visit. Assistant Professor, Physics Department, Univ. of Virginia

Research Interests

Development of theoretical understanding of the properties of disordered systems, with emphasis on electron and photon localization, photonic crystals, random lasers, metamaterials, left-handed materials, random magnetic systems, nonlinear systems, and amorphous semiconductors. The theoretical models developed are often quite sophisticated to accurately reflect the complexity of real materials.

Honors and awards

APS – Fellow (1991); OSA – Fellow (2002); AAAS – Fellow (2002);
Outstanding Scientific Accomplishment in Solid State Physics (DOE, 1992)
LAS Excellence in Research Award, ISU 2000, ISU Outstanding Achievement in Research, 2001
Energy 100 Award and Science 100 Award, U. S. DOE, Humboldt Senior Research Award, 2002
Descartes Price for Research, European Union, 2005

Invited talks at international conferences and institutions

Has approximately 120 invited lectures (52 since 2003) at national and international conferences, and about 100 invited talks (30 since 2003) at institutions.

Publications (More than 330 publications (98 since 2003) in refereed journals, 3 patents, h index of 60 and ~13000 citations at a rate of 1850 per year in 2008)

Five most relevant publications for proposal

1. C. M. Soukoulis, S. Lindedn and M. Wegener, "Negative refractive index at optical wavelengths," *Science*, **315**, 47 (2007).
2. G. Dolling, M. Wegener, C. M. Soukoulis and S. Linden, "Negative-index metamaterial at 780 nm wavelength," *Opt. Lett.* **32**, 53 (2007).
3. G. Dolling, C. Enkrich, M. Wegener, C. M. Soukoulis and S. Linden, "Observation of simultaneous negative phase and group velocity of light," *Science* **312**, 892 (2006).
4. E. N. Economou, Th. Koschny and C. M. Soukoulis, "Strong diamagnetic response of metamaterials," *Phys. Rev. B* **77**, 092401 (2008).
5. M. Kafesaki, I. Tsiapa, N. Katsarakis, Th. Koschny, C. M. Soukoulis and E. N. Economou, "Left-handed metamaterials: The fishnet structure and its variations," *Phys. Rev. B* **75**, 235114 (2007).

Five other publications

1. W. Dai, B. Wang, Th. Koschny and C. M. Soukoulis, "Experimental verification of quantized conductance for microwave frequencies in photonic crystal waveguides," *Phys. Rev. B* **78**, 073109 (2008).
2. J. Zhou, Th. Koschny and C. M. Soukoulis, "An efficient way to reduce losses of left-handed metamaterials," *Optics Express* **16**, 11147 (2008).
3. R. Moussa, B. Wang, G. Tuttle, Th. Koschny and C. M. Soukoulis, "On the beaming and enhanced transmission in photonic crystals," *Phys. Rev. B* **76**, 235417 (2007).

4. S. Linden, C. Enkirch, M. Wegner, J. Zhou, T. Koschny and C. M. Soukoulis, “Magnetic response in metamaterials at 100 THz”, *Science* **306**, 1351 (2004).
5. M. Deubel, G. von Freymann, M. Wegener, S. Pereira, K. Busch and C. M. Soukoulis, “Direct laser writing of 3D photonic crystal templates for photonic bandgaps at 1.5 micrometers,” *Nature Materials* **3**, 444 (2004).
6. S. Foteinopoulou, E. N. Economou and C. M. Soukoulis, “Refraction at Media with negative refractive index,” *Phys. Rev. Lett*. **90**, 107402 (2003).

Professional Activities

Editor *Photonic Nanostructures: Fundamentals and Applications* & *Optics Letters*
Director of three NATO ASIs (1992, 1995, 2000) on Photonic Crystals. Director of PECS-VI, 2005
Has been a member or a chairman of various International Scientific Committees responsible for various International Conferences. (OSA, CLEO/IQES, MRS, PECS, NANOMETA, ETOPIM, NATO).
Referee on the average 10-15 papers per year for *Phys. Rev. Lett*., *Phys. Rev. B* and *E*, *J. of Phys*., *Nature, Science, Optical Society of America*, *Appl. Phys. Lett*. and *others.*
Reviewer of proposals (DOE) as panel member for NSF and European Union.
Chair of the External Advisory Board for Metamaterials Science & Technology Grand Challenge at Sandia.
Has written several articles for scientific encyclopedias, a lot of review articles and is frequently asked by the editors of Science and Nature and other scientific magazines to comment about recent scientific publications.
Finally, a textbook entitled *Wave Propagation: From Electrons to Photonic crystals and Left-handed Materials*, was published by Princeton University Press 2008.

Graduate Advisor: K. Levin, Dept. of Physics, University of Chicago, Chicago, Illinois, USA
Collaborators: D. R. Smith (Duke), E. N. Economou & M. Kafesaki, (Crete, Greece)), M. Wegener (Karlsruhe, Germany), J. B. Pendry (Imperial, UK), E. Ozbay (Bilkent, Turkey), N. Zheludev (Southampton, UK), K. M. Ho, G. Tuttle, Th. Koschny.
Graduate Students: *4 M.Sc., 17 Ph.D.* **Post-doctoral Fellows:** *11*